IN THE SPECIFICATION

Please amend the specification as follows:

Replace the paragraph beginning on page 7, line 32 with:

Figure 1 depicts a frame from an illustrative IPG page 100. In this particular embodiment of an IPG, the guide grid information is contained in portion 102 (left half page) and the video information is contained in portion 101 (right half page). The 1PG display 100 comprises: first 105A, second 105B and third 105C time slot objects; a plurality of channel content objects 110-I through 110-8, each having a plurality of lines 111H of information; a pair of channel indicator icons 141A, 141B; a video barker 120 (and associated audio barker); a cable system or provider logo 115; a program description region 150; a day of the week identification object 131; a time of day object 139; a next time slot icon 134; a temporal increment/decrement object 132; a "favorites" filter object 135, a "movies" filter object 136; a "kids" (i.e., juvenile) programming filter icon 137; a "sports" programming filter object 138; and a VOD programming icon 133. It should be noted that the day of the week object 131 and next time slot icon 134 may comprise independent objects (as depicted in Figure 1) or may be considered together as parts of a combined object.

Replace the paragraph beginning on page 14, line 3 with:

Figure 7 depicts a process 700 that is used to form a bitstream 710 containing all the intra-coded slices encoded at a particular time t1 of Figure 6. At step 702, a plurality of IPG pages ~~7021 through 70210~~ 702_1 through 702_{10} are provided to the encoding unit. At step 704, each page is slice base encoded to form, for example, guide portion slices g1/s1 through g1/sN and video portion slices v/s1 through v/sN for IPG ~~page 1 7041~~ pages 704_1, 704_2, and 704_3. The slice based encoding process for video and guide portions can be performed in different forms. For example, guide portion slices can be pre-encoded by a software MPEG-2 encoder or encoded by the same encoder as utilized for encoding the video portion. If the same encoder is employed, the parameters

of the encoding process is adjusted dynamically for both portions. It is important to note that regardless of the encoder selection and parameter adjustment, each portion is encoded independently. While encoding the video portion, the encoding is performed by assuming the full frame size (covering both guide and video portions) and the guide portion of the full frame is padded with null data. This step, step 704, is performed at the HEE. At step 706, the encoded video and guide portion slices are sent to the LNE. If the LNE functionality is implemented as part of the HEE, then, the slices are delivered to the LNE as packetized elementary stream format or any similar format as output of the video encoders. If LNE is implemented as a remote network equipment, the encoded slices are formatted in a form to be delivered over a network via a preferred method such as cable modem protocol or any other preferred method. Once the slice-based streams are available in the LNE, the slice combiner at step 706 orders the slices in a form suitable for the decoding method at the receiver equipment. As depicted in Figure 7 (b), the guide portion and video portion slices are ordered in a manner as if the original pictures in Figure 7 (a) are scanned from left to right and top to bottom order. Each of the slice packets are then assigned PID's as discussed in Figure 6 by the multiplexer; PID1 is assigned to g1/s1 ... g1/sn, PID2 to g2/s1 ... g2/sn, PID10 to g10/s1 ... g10/sn, and PID11 is assigned to v/s1 ... v/sn. The resultant transport stream containing the intra-coded slices of video and guide portions is illustrated in Figure 7 (c). Note that based on this transport stream structure, a receiving terminal as discussed in later parts of this description of the invention, retrieves the original picture by constructing the video frames row-by-row, first retrieving, assuming PID1 is desired, e.g., g1/s1 of PID1 then v/s1 of PIDI1, next g1/s2 of PID1 then v/s2 of PID11 and so on.

Replace the paragraph beginning on page 15, line 1 with:

Figure 8 illustrates a process 800 for producing a bitstream 808 containing the slices from the predictive-coded pictures accompanying the transport stream generation process discussed in Figure 7 for intra-coded slices. As shown in Figure 6, illustratively, only the predicted slices belonging to IPG page 1 is delivered. Following the same arguments of encoding process in Figure 7, at step 802, the predictive-coded slices are

generated at the HEE independently and then forwarded to an LNE either as local or in a remote network location. At step 804, slices in the predictive-coded guide and video portion slices, illustratively from time periods t2 to t15, are scanned from left to right and top to bottom in slice-combiner and complete data is assigned PID 11 by the multiplexer. Note that the guide portion slices g1/s1 to g1/sn at each time period t2 to t15 does not change from their intra-coded corresponding values at t1. Therefore, these slices are coded as skipped macroblocks "sK". Conventional encoder systems do not necessarily skip macroblocks in a region even when there is no change from picture to picture. At step 806, the slice packets are ordered into a portion of final transport stream, first including the video slice packets v2/s1 ... v2/SN to v15/s1 ... v15/sN, then including the skipped guide slices sK/s1 ... sK/sN from t2 to t15 in the final transport stream. FIG. 9 depicts a complete MPEG compliant transport stream 900 that contains the complete information needed by a decoder to recreate IPG pages that are encoded in accordance with the invention. The transport stream 900 comprises the intra-coded bitstream 710 of the guide and video slices (PIDS1 to 11), a plurality of audio packets ~~902~~ identified by an audio PID, and the bitstream 806 containing the predictive-coded slices in PID11. The rate of audio packet insertion between video packets is decided based on the audio and video sampling ratios. For example, if audio is digitally sampled as one tenth of video signal, then an audio packet may be introduced into the transport stream every ten video packets. The transport stream 900 may also contain, illustratively after every 64 packets, data packets that carry to the set top terminal overlay updates, raw data, HTML, java, URL, instructions to load other applications, user interaction routines, and the like. The data PIDs are assigned to different set of data packets related to guide portion slice sets and also video portion slice sets.

Replace the paragraph beginning on page 16, line 19 with:

Figure 12 depicts the scanning process 1200 used to produce a bitstream 1210 containing the intra-coded slices. The scanning process 1200 flows from left to right, top to bottom through the assigned slices of Figure 11B. PIDs are assigned, at step 1202, to slices 1 to M; at step 1204, to slices M+1 to L; and, at step 1206, to slices L+1 to N.

As the encoded IPG is scanned, the PIDS are assigned to each of the slices. The guide portion slices are assigned PIDS 1 through 10, while the first video portion slices are assigned PID 11, the second video portion slices are assigned PID 12 and the third video portion slices are assigned PID13. The resulting video portion 1208 of the bitstream 1210 contains the PIDS for slices 1-M, followed by PIDS for slices M+1 to L, and lastly by the PIDS for L+I to N.

Replace the paragraph beginning on page 19, line 13 with:

The video compositor 1490 merges the graphical overlay signal VOSD and the uncompressed video stream VD to produce a modified video stream (i.e., the underlying video images with the graphical overlay) that is coupled to the frame store unit 1462. The frame store unit ~~562~~ 1462 stores the modified video stream on a frame-by-frame basis according to the frame rate of the video stream. Frame store unit ~~562~~ 1462 provides the stored video frames to a video processor (not shown) for subsequent processing and presentation on a display device.

Replace the paragraph beginning on page 21, line 26 with:

At step 1515, the I-PID packets (e.g., packets having PID-1 and PID-11) are extracted from the transport stream, including the header information and data, until the next picture start code. The header information within the first-received I-PID access unit includes sequence header, sequence extension, group start code, GOP header, picture header, and picture extension, which are known to a reader that is skilled in MPEG-1 and MPEG-2 compression standards. The header information in the next I-PID access units that belongs to the second and later GOP's includes group start code, picture start code, picture header, and extension. The method 1500 then proceeds to step 1520 where the payloads of the packets that includes header information related to video stream and I-picture data are coupled to the video decoder ~~1550~~ as video information stream V. The method 1500 then proceeds to step 1525.

Replace the paragraph beginning on page 22, line 3 with

At step 1525, the predicted picture slice-based stream packets PRED-PID, illustratively the PID- 11 packets of fourteen predicted pictures in a GOP of size fifteen, are extracted from the transport stream. At step 1530, the payloads of the packets that includes header information related to video stream and predicted-picture data are coupled to the video decoder 1550 as video information stream V. At the end of step 1530, a complete GOP, including the I-picture and the predicted-picture slices, are available to the video decoder ~~1550~~. As the payloads are sent to the decoder in exactly in the order in which the packets arrive at the demultiplexer, the video decoder decodes the recombined stream with no additional recombination process. The method 1500 then proceeds to step 1535.